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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/548,409

09/08/2005

Makoto Komatsubara

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08/20/2008

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EXAMINER

ZHAO, XIAO SI

ART UNIT

PAPER NUMBER

1792

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/548,409	KOMATSUBARA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	XIAO ZHAO	4172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 10-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/8/2005, 10/19/2005, 12/13/2005</u> .                        | 6) <input type="checkbox"/> Other: _____                          |



**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of claims 1-6 and 10-14 in the reply filed on 7/15/2008 is acknowledged.

2. Claims 7-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/15/2008.

**3. *Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-3, 5, and 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to the examiner what the term "long-length" in the aforementioned claims is describing. Long is a relative term, and when combined with length, renders the substrate indefinite. The examiner will proceed to examine the above claims assuming that "long-length substrate" is a substrate in which the length is greater than the width or in other words, a rectangular substrate.

6. Claim 12-14 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12-14 further limits claim 10 wherein all the claims recite "said plate". The "said plate" is indefinite because claim 11 further limits claim 10

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by introducing a first and a second plate. It is unclear to the examiner which plate is the "said plate" in claim 12-14. From the specification, the examiner can reasonably assume that claim 12-14 refers to the first plate; thus, claim 12-14 will be examined wherein said plate refers to said *first* plate.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**9. Claims 1, 3-5, and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huelsman et al. (US 5694701).**

Huelsman et al. teach a method of drying a coating on a substrate using a condensing surface located adjacent to the substrate on the side of the substrate being dried (see abstract and Fig. 1 and 2). The liquid to be evaporated from the coating can be any liquid solvent system (col. 1, 13-15). The rate of drying can be controlled by controlling the height of the gap and the temperature differential between the coated

substrate and the condensing surface (col. 3, 45-47). The substrate can move relative to the plates (col. 4, 16-17). A coating is applied to the substrate and then dried (col. 13, 7-26).

Huelsman et al. does not explicitly disclose the evaporation rate of the solvent to be less than  $0.1 \text{ g/m}^2\text{s}$ ; the coating immediately dried after application of the coating. However, it would have been obvious to one of ordinary skill in the art at the time of the invention that evaporation rate is a result effective variable which can be controlled by controlling the height of the gap and the temperature differential between the coated substrate and the condensing service (as aforementioned from Huelsman et al.). Thus, the optimization of the evaporation rate to reach less than  $0.1 \text{ g/m}^2\text{s}$  only requires ordinary skill in the art (see MPEP 2144.05). Also, it would have been obvious to one of ordinary skill in the art at the time of the invention that drying of the coating can be immediately done after the application of the coating since this will result in a more efficient process time by eliminating the downtime between coating and drying.

The condensing surface can be formed on a stationary or rotating belt and alternatively formed of fins (col. 3, 48-50). A heated plate is placed below the substrate (col. 6, 49-53 and Fig. 1 and 2). A gap exists between the plate and the condensing plate and between the plate and the heating plate (col. 6, 58-60). The web, having a coating, can travel at any speed between the two plates (col. 6, 60-62). The method can be used without condensation by raising the condensing plate surface above the dew point of the vapors in the gap (col. 12, 26-29). The widths of both plates are wider than the width of the substrate and the first plate is provided as one side of a tunnel

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structure which surrounds the substrate (see Fig. 1 and 2). Grooves are placed at the bottom surface of the condensing plate in which each of the extending grooves is perpendicular to the substrate (col. 7, 32-35 and Fig. 3). The grooves can be triangular, rectangular, circular, or other more complex shapes (col. 7, 37-44).

Huelsman et al. does not teach that the grooves are convex structures or explicitly disclose that the substrate is provided via downstream side of a coating system. However, the use of convex structures as grooves would have been obvious and within one of ordinary skill in the art since Huelsman et al. disclose that any complex shapes can be used and thus the use of a convex structure would yield predictable and similar results (col. 7, 37-44). Furthermore, as aforementioned, the substrate is dried after it is coated (col. 13, 7-26) and this would be understood by one of ordinary skill in the art that the drying is downstream of coating, or in other words, drying takes place after coating.

**10. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huelsman et al. (US 5694701) as applied to claim 1 in view of Andes et al. (US 6238472).**

Huelsman et al. teach all the limitations of claim 1 but fail to teach that drying is done until coated substrate enters a drying system and the coating formed is an optically functional layer.

Andes et al. teach an optically functional layer consisting of pigments(col. 5, 63-66) that is passed through a dryer on a coated belt (col. 4, 14-18).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the dryer system taught by Andes et al. to additionally dry the coated substrate taught by Huelsman et al. One would have been motivated to do this because this would enable additional drying of the coating and remove any moisture that was not completely removed from the evaporation. In addition, it has been established that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced.

Furthermore, it would have been obvious to one of ordinary skills in the art at the time of the invention to use an optically functional layer, as taught by Andes et al., as the coating in Huelsman et al.'s drying steps. One would have been motivated to dry an optically functional coating because to form the layer, the initial liquid in the optically functional coating needs to be dried. In addition, all layers have an optical function since by just looking at a layer - its appearance provides that optical function.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAO ZHAO whose telephone number is (571)270-5343. The examiner can normally be reached on Monday to Friday 7:30 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571)272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Xiao S Zhao/  
Examiner, Art Unit 4172/Michael Kornakov/  
Supervisory Patent Examiner, Art Unit 1792